

Abstract

The systems and methods described herein provide a processing engine useful in a communications receiver. The processing engine substantially reduces interference caused by unwanted signals by mathematically reducing the energy of the signals. In one embodiment, the signals have known CDMA coding schemes. The signals are selectively substantially cancelled using a matrix generated, at least in part, from determined CDMA codes. For example, a receiver of one embodiment includes a demodulator unit for determining a code from each of a plurality of signals and for demodulating one or more of the plurality of signals. The processing engine is communicatively coupled to the demodulator unit and configured for generating a matrix of one or more vectors based on determined codes. Each element of the vectors comprises a component of the determined codes and the matrix itself is used to selectively substantially reduce energy from one or more of the signals.